Amendment to Claims

1. (Currently Amended) A method for use in a storage switch in a storage network having a plurality of ports, the method comprising:

(a) receiving at a first port of the switch a packet that specifies a virtual target as a destination;

(b) sending at a second port of the switch the packet to a physical target that is associated with the virtual target; and

wherein ~~steps (a) and (b) occur~~ said sending comprises virtualizing said packet by translating a first address of said virtual target to a second address of said physical target without buffering the packet ~~within the switch~~.

2. (Currently Amended) The method of claim 1, wherein ~~steps (a) and (b) further occur~~ said virtualizing occurs at wire speed.

3. (Currently Amended) The method of claim 1, wherein the first port is located on a first linecard and wherein the second port is located on a second linecard,

the first linecard forwarding the packet to the second linecard along with information about the virtual target;

the second linecard utilizing the information about the virtual target to update the packet with ~~an~~ the second address of ~~a~~ the physical target.

4. (Original) The method of claim 3, wherein the information about the virtual target is obtained from a virtual target descriptor.

5. (Original) The method of claim 3, wherein the information about the virtual target is obtained from a virtual target descriptor stored in a memory on the first linecard.

6. (Original) The method of claim 3, wherein the second linecard utilizes information about the virtual target to obtain information about a physical target associated with the virtual target.

7. (Original) The method of claim 1, wherein the packet is for a particular request, and wherein at least one trace tag is associated with the packet and identifies information associated with the request.

8. (Original) The method of claim 1, wherein the first port is located on a first linecard and wherein the second port is located on a second linecard,

the first linecard forwarding the packet to a plurality of linecards, including the second linecard, along with information about the virtual target, wherein each linecard in the plurality of linecards includes a port in communication with a respective physical device associated with the virtual target;

each of the plurality of linecards utilizing the information about the virtual target to update the packet with an address of the respective physical target.

9. (Currently Amended) A method for use in a storage switch in a storage network having a plurality of ports, the method comprising:

(a) receiving at a first port of the switch a packet that specifies a virtual target as a destination;

(b) sending at a second port of the switch the packet to a physical target that is associated with the virtual target; and

wherein ~~steps (a) and (b) occur~~ said sending comprises virtualizing said packet by translating a first address of said virtual target to a second address of said physical target at wire speed ~~within the switch~~.

10. (Currently Amended) A method for use in a storage switch in a storage network having a plurality of ports, the method comprising:

(a) receiving at a first port located on a first linecard of the switch a packet that specifies a virtual target as a destination;

(b) the first linecard forwarding the packet to a second linecard of the switch along with information about the virtual target, wherein the second linecard includes a port in communication with a physical target associated with the virtual target;

(c) the second linecard utilizing the information about the virtual target to update the packet with an address of the physical target;

(d) sending by the second linecard the packet to the respective physical target; and

wherein steps ~~(a) - (d) occur~~ (b) – (c) comprise translating a virtual target address to said address of the physical target without buffering the packet.

11. (Currently Amended) The method of claim 10, wherein steps ~~(a) (d)~~ (b) – (c) occur at wire speed.

12. (Currently Amended) A method for use in a storage switch in a storage network having a plurality of ports, the method comprising:

(a) receiving at a first port located on a first linecard of the switch a packet that specifies a virtual target as a destination;

(b) the first linecard forwarding the packet to a plurality of linecards of the switch along with information about the virtual target, wherein each linecard in the plurality of linecards includes a port in communication with a respective physical target associated with the virtual target;

(c) each of the plurality of linecards utilizing the information about the virtual target to update the packet with an address of the respective physical target;

(d) sending by each of the plurality of linecards the packet to the respective physical target; and

wherein steps ~~(a) - (d) occur~~ (b) – (c) comprise translating a virtual target address to said address of the physical target without buffering the packet.

13. (Currently Amended) The method of claim 12, wherein steps ~~(a) (d)~~ (b) – (c) occur at wire speed.

14. (Currently Amended) A method for use in a storage switch in a storage network, comprising:

(a) receiving a packet at an ingress port of an ingress linecard of the switch, said packet destined for a virtual target with a virtual target address;

(b) the ingress linecard retrieving information about the virtual target from a virtual target descriptor, the information including a flowID, and placing a virtual target descriptor identifier and the flowID, in a local header of the packet;

(c) the ingress linecard forwarding the packet to a fabric, which forwards the packet to an egress linecard in accordance with the flowID;

(d) the egress linecard using the virtual target descriptor identifier to identify information about a physical target associated with the virtual target, and using the information about the physical target to convert a virtual target block address to a physical target block address; ~~and~~

(e) the egress linecard sending the packet to the physical target using the physical target block address; and wherein steps (b) and (d) are preformed without buffering the packet.

15. (Original) The method of claim 14, wherein:

the packet is associated with a request;

the ingress linecard further placing a trace tag in the local header, wherein the trace tag is associated with the request and wherein the trace tag identifies stored information about the request; and

the egress linecard including the trace tag as a source identifier with the packet sent.

16. (Currently Amended) The method of claim 14, wherein ~~all of the~~ steps (b) and (d) are performed at wire speed.

17. (Cancelled)

18. (Original) The method of claim 14, wherein the virtual target descriptor is stored in an SRAM on the ingress linecard and the virtual target descriptor identifier is stored in a CAM on the ingress linecard.

19. (Original) A method for use in a switch in a storage network, comprising:

receiving a packet at an ingress port of an ingress linecard, said packet destined for a virtual target with a virtual target address, the packet associated with a request;

adding a local header to the packet;

retrieving a virtual target descriptor identifier, wherein the virtual target descriptor identifier identifies a virtual target descriptor, wherein the virtual target descriptor stores information about the virtual target;

allocating an ingress task control block identified by an ingress task control block index, wherein the ingress task control block index stores information about the request;

placing the ingress task control block index and the virtual target descriptor identifier into the local header;

retrieving a flowID from the virtual target descriptor and placing the flowID into the local header, wherein the flowID identifies an egress linecard;

forwarding the packet to the egress linecard through a fabric;

receiving the packet at the egress linecard;

using the virtual target descriptor identifier, retrieving a physical target descriptor identifier, wherein the physical target descriptor identifier identifies a physical target descriptor, wherein the physical target descriptor stores information about a physical target that is associated with the virtual target;

allocating an egress task control block with an egress task control block index, wherein the egress task control block index stores information about the request;

using information in the physical target descriptor to convert the virtual target address to a physical target address;

removing the local header and forwarding the packet to an egress port on the egress linecard; and

sending the packet from the egress port to a physical target device, using the egress task control block index as a source identifier.

20. (Original) The method of claim 19, wherein all of the steps occur at wire speed.

21. (Original) The method of claim 19, wherein all of the steps occur without buffering the packet.

22. (Original) The method of claim 19, wherein the virtual target descriptor, the virtual target descriptor identifier, the ingress task control block the egress task control block, the physical target descriptor, and the physical target descriptor identifier are each stored in memory on the respective linecards.

23. (Original) The method of claim 19, wherein the virtual target descriptor and the ingress task control block are stored in an SRAM on the ingress linecard, the virtual target descriptor identifier is stored in a CAM on the ingress linecard, the physical target descriptor and the egress task control block are stored in an SRAM on the egress linecard, and the physical target descriptor identifier is stored in a CAM on the egress linecard.

24. (Currently Amended) A storage switch for use in a storage network, comprising:

a plurality of linecards, each linecard including:

a port having an input to receive a packet;

a processor unit associated with and in communication with the port, the processor unit designed to perform a virtualization function <u>to translate a virtual target address to a physical target address</u> for the packet without buffering the packet; and

a CPU in communication with the processor unit.

25. (Currently Amended) The switch of claim 24, wherein the processor unit is further designed to perform ~~a~~ said virtualization function for the packet at wire speed.

26. (Original) The switch of claim 24, wherein each linecard includes a plurality of ports and a plurality of processor units, wherein each processor unit is in communication with at least one respective port.

27. (Original) The switch of claim 24, wherein the processor unit includes a packet aggregation and classification engine (PACE) and a packet processor unit (PPU).

28. (Original) The switch of claim 27, wherein the processor unit further includes an SRAM and a CAM, both in communication with the PPU.

29. (Previously Amended) A storage switch for use in a storage network, comprising:

a plurality of linecards;

each linecard has a plurality of ports;

each port is associated with a respective processor unit;

each processor unit is coupled to a traffic manager, which in turn is coupled to a fabric, allowing packets to pass from an ingress linecard to an egress linecard; and

wherein each processor unit is coupled to receive a packet from its respective associated port, the packet destined for a virtual target, the processor unit including a virtualization unit, the virtualization unit designed to translate at wire speed an address in the packet from a virtual target address to a physical target address.

30. (Currently Amended) A linecard for a storage switch, comprising:

a port; and

means for performing a virtualization function to translate a virtual target address to a physical target address for a packet without buffering the packet.

31. (Currently Amended) A linecard for a storage switch, comprising:

a plurality of ports;

a plurality of processor units, wherein each processor unit is associated with at least one respective port;

wherein each processor unit includes a wire-speed virtualization unit that translates a virtual target address to a physical target address, wherein the virtualization unit includes stored virtual target descriptors and stored physical target descriptors; and

a CPU in communication with each of the processor units.

32. (Currently Amended) A storage switch, comprising:

a plurality of linecards each including a plurality of ports; and

means for receiving at a first port a packet destined for a virtual target and sending the packet to a physical target from a second port, including means for translating a virtual target address to a physical target address without buffering the packet.

33. (Currently Amended) The switch of claim 32, wherein the means for translating further includes means for receiving at a first port a packet destined for a virtual target and sending the packet to a physical target from a second port ~~without buffering the packet and~~ at wire speed.

34. (Currently Amended) A set of software instructions stored on at least one medium in a storage switch for use in a system for storing and accessing data, which instructions are executable by a processor, the instructions including:

instructions for receiving at a first port located on a first linecard a packet that specifies a virtual target as a destination;

instructions for forwarding, by the first linecard, the packet to a second linecard along with information about the virtual target, wherein the second linecard includes a port in communication with a physical target associated with the virtual target;

instructions for utilizing, by the second linecard, the information about the virtual target to update the packet with an address of the physical target; ~~and~~

instructions for sending by the second linecard the packet to the respective physical target; and

~~wherein all of the above~~ instructions ~~are to be carried out~~ for viritualizing the packet by translating a first address of said virtual target to a second address of said physical target without buffering the packet.

35. (Currently Amended) The set of software instructions of claim 34, wherein ~~all of~~ the instructions for virtualizing are to be carried out at wire speed.